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June 7, 1965

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 Proposal No. 2209WORK STATEMENT

Declass Review by NGA.

INTRODUCTION

The responsibilities of an R & D staff charged with the direct support of an Image Analysis function requires broad knowledge in diverse technical and scientific disciplines. The daily requirements of project supervision and of industrial liaison normally tax the capabilities of the R & D officer to the utmost, thus leaving to suffer those areas of personal improvement of a more academic nature in favor of immediate and pressing tasks. Proposed in the following paragraphs is a library search effort wherein the existing literature germane to one significant scientific discipline shall be investigated, extracted, and "filtered" by and through experienced interpreter personnel, in search of those items of knowledge that have latent utility for the P.I. Research & Development officer.

SCOPE OF INVESTIGATION

The investigation will attempt to discover and point out for further research those aspects of vision and perception which bear directly on the visual tasks of the photo interpreter. It will, therefore, be chiefly concerned with empirical physical data on subjective perception -- that is, what the subject sees and knows that he sees. The field of specialization called "psychophysics," which collects experimental data on visual perception and interprets this information from the physical point of view, most effectively embraces the aims of the investigation. The physiology of vision will be considered as background, since knowledge of physiological processes is necessary to explain and interpret psychophysical data, but will not be a primary subject of study; basic works on the physiology of vision will be referenced,

but not comprehensively reviewed.

Some of the aspects of vision and perception which we consider necessary for understanding of the photo interpreter's perceptual experience are:

- Retinal mechanisms of wavelength discrimination and subjective phenomena of color perception
- Duplicity of vision, retinal adaptation, time effects, flicker and afterimages
- Visual acuity and the nature of visual thresholds
- Visual factors in illumination
- Effects of environment on visual tasks; sensory deprivation

Other subjects for study may be added to the investigation (or substituted) by discussion and agreement with the contracting agency's technical monitor. However, the time limits of the proposed program will require the investigation to be held rather strictly to a few basic (and intellectually difficult) subjects. Rather than allow the initial investigation to diffuse over a vast and controversial field, it is preferable to acquire some understanding of the basic factors governing vision and perception, to illuminate further research and guide working applications.

METHOD OF INVESTIGATION:

The proposed work shall be accomplished largely through the efforts of two persons. The primary project worker shall search appropriate technical and semi-technical literature available through local academic and professional libraries as well as those materials available through the Defense Document Center to isolate reporting of investigation or statement of fact which fall within the scope of PI/Vision relationships. Uncovered materials shall be extracted and compiled, then subjected to a second "filtering" process by a skilled P.I. with broad experience

in general as well as unique image analysis methods.

Both the literature search and the secondary screening process cannot and will not attempt to evaluate the validity or content of those materials researched. Rather, sole attention shall be given to indexing and selection procedures whereby only those items estimated to have direct functional value to the P.I. task will be called out and arranged in a useable form.

At the request of, or with the approval of the contracting officer's technical representative, special interviews may be arranged with specific research workers whose prior work or reported interests hold promise of contributory recommendation.

The contractor's personnel involved in this project shall be available at times and places specified by the contracting officer's technical representative to receive briefings or instruction or to report work and findings.

REPORTING:

Quarterly letter reports of work accomplished and progress shall be submitted. Significant data felt to be of ^{unusual} ~~immediate~~ import ^{should} ~~may be~~ *result in an immediate short report.* included in these reports.

submit of personnel on 3x5 cards

A final report shall be submitted consisting of three parts. Part one shall be a brief project review. Part two, in loose leaf notebook form shall contain those statements of pertinent research or findings, subdivided into categories, deemed appropriate to the P.I. R & D officers professional vision information need. Source materials for design guidance as are set forth therein shall be included with all other useful data found, in portion III of the report, an abstracted bibliography of pertinent findings.

TERM OF CONTRACT

The proposed work shall be completed 12 months from date of contract unless enlargement of the scope of effort shall be requested by the contracting agency.

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Approved For Release 2004/11/30 : CIA-RDP78B04770A000900040027-1

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and as approved by the Contracting officers' technical representative.

NOTES TO COST PROPOSAL
(T&M Basis)

[] Division Proposal No. 2209 (Revised)
June 7, 1965

1. This cost proposal is submitted on a Time and Materials basis.
2. The estimated labor cost is based on the actual hourly rate of the individuals scheduled to perform on the proposed contract. A factor of 3% is added for merit increases and salary adjustments that occur between reviews of the bidding rate. The rates include Overhead, G&A, and Fee, and are effective as of January 4, 1965.
3. [] has scheduled specific personnel expected to work on the contract. However, reasonable substitutions of individuals with comparable skill and experience could be made as dictated by work-load and availability. The labor to be billed in the event of such substitutions would be computed as indicated in Note 2.
4. Estimated Overhead and G&A rates for the fiscal year beginning January 1, 1965, are 140% and 14%, respectively.
5. Those items identified in this cost proposal as "Other Direct Costs" are based on the following:
 - (a) Travel, unless otherwise indicated, is estimated on the basis of round-trip tourist jet fares. Locations not serviced directly by through jet are costed on a combined jet and conventional least-cost basis.
 - (b) Per diem costs include car rental. For estimating purposes per diem is bid at \$35 per day plus G&A. Billing will be on the basis of actual expense incurred.
- All "Other Direct Cost" items included herein are based on estimated cost plus applicable G&A. No fee is included.
6. Monthly progress payments will be required.
7. The commitment to this offer will remain firm for 90 days from the date of this submittal.
8. [] cognizant audit agency is the United States Air Force Auditor General Branch Office, 1069 East Meadow Circle, Palo Alto, California.

9. Questions relating to this cost proposal should be addressed

[] Contracts Manager, or []
Controller, []

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